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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,515	10/24/2003	Ashish Shah	MSFT-2844/306723.01	9293
41505 7590 06/27/2007 WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION) CIRA CENTRE, 12TH FLOOR 2929 ARCH STREET PHILADELPHIA, PA 19104-2891			EXAMINER SAEED, USMAAN	
			ART UNIT 2166	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<p align="center"><b>Office Action Summary</b></p>	<b>Application No.</b> 10/692,515	<b>Applicant(s)</b> SHAH ET AL.	
	<b>Examiner</b> Usmaan Saeed	<b>Art Unit</b> 2166	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/16/2007 has been entered.

### ***Claim Rejections - 35 USC § 101***

The amended claims received on 04/16/2007 are acceptable and they overcome the 35 U.S.C 101 rejections.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the

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invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 5-9, 13-17, 20-24, and 28-30 are rejected under 35 U.S.C. 102(e) as being anticipated by **Multer et al. (Multer hereinafter)** (U.S. Patent No. 6,694,336).

With respect to claim 1, **Multer** teaches a **storage platform system for a hardware/software interface system, implemented at least in part by a computing device, said storage system comprising:**

**“multiple instances of a storage platform each instance storing data, the data divided into programmably defined change units”** as each device engine performs mapping and translation steps necessary for applying the data packages to the local format required for that type of information in the application data stores 822-828 (**Multer** Col 11, Lines 11-14). In one embodiment, the invention comprises a set of programs specifically designed to transmit and/or receive differencing data from one device to another device, irrespective of the type of file system, data, content, or system hardware configuration (**Multer** Col 5, Lines 17-16-20).

The objects in universal data format are device, (application) data class, store, folder, item, and data fields (**Multer** Col 18, Lines 40-41).

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Examiner interprets the data stores 822-828 as multiple instances of a storage platform/file system and each instance/data store has folders, items, data fields which are interpreted as change units by the examiner.

**“a synchronization subsystem native to the hardware/software interface system that enable the system to perform a synchronization operation to synchronize the data stored in the multiple instances of said storage platform based on changes that are sequentially enumerated and tracked on a per change unit basis”** as items such as when to sync, how to sync, trigger the delta module 950 to perform a synchronization operation (**Multer** Col 11, Lines 55-57). The invention, roughly described, comprises a difference information receiver, a difference information transmitter and a difference information synchronizer which cooperate in a system or device to update data in the device with data received from other systems, or provide data for other systems to use in updating themselves (**Multer** Col 3, Lines 21-25). EnumItem interface allows the enumeration of either Folder objects or Item objects or both (**Multer** Col 20, Lines 16-18).

With respect to claim 2, **Multer** teaches **“the system of claim 1 wherein the synchronization subsystem synchronizes only a subset of data, from among the entirety of data on said data store, during a synchronization operation”** as generating first difference information upon a change to the data files by comparing the change to the data store; receiving second difference information for a subset of said

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data files from a second system; and applying said difference information to said subset of said data files (**Multer Abstract**).

With respect to claim 5, **Multer** teaches “**the system of claim 1 wherein a first pair of instances synchronizes changes independently of a second pair of instances, and wherein both the first pair of instances and the second pair of instances are part of a common sync community**” as the invention, roughly described, comprises a difference information receiver, a difference information transmitter and a difference information synchronizer which cooperate in a system or device to update data in the device with data received from other systems, or provide data for other systems to use in updating themselves (**Multer Col 3, Lines 21-25 and Figures 1-5**).

With respect to claim 6, **Multer** teaches “**the system of claim 1 wherein conflicts in synchronization are automatically detected and resolved based on predefined determinable criteria**” as in this embodiment, storage server 300 may include routines, described below, for resolving conflicts between data which has changed on both System A and System B independently after the last point in times when the systems were synchronized (**Multer Col 7, Lines 1-5**).

With respect to claim 7, **Multer** teaches “**the system of claim 6 wherein certain of said conflicts are resolved by being logged for manual resolution by an end-**

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**user**” as if both files have changed, then the synchronization routine presents the option of conflict resolution to the user (**Multer** Col 2, Lines 39-41).

With respect to claim 8, **Multer** teaches “**the system of claim 1 wherein the synchronization subsystem tracks the state of previous synchronizations with a sync partner, and thereby only synchronizes change units with that partner that have changed since the last synchronization**” as the system includes: a system data store associated with the processing device including a representation of a previous state of application data in the application data store; a difference engine generating difference information associated with a change to said application data store; and an application interface, interpreting application data for the difference engine. The difference engine may further comprise a delta engine comparing the change to said application data store to said system data store to construct difference information (**Multer** Abstract).

With respect to claim 9, **Multer** teaches a method implementing at least in part by a computing device for synchronizing data stored in multiple instances of a storage platform for a hardware/software interface systems, said method comprising:

“**Dividing said data stored in storage platform into programmably defined, change units**” as each device engine performs mapping and translation steps

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necessary for applying the data packages to the local format required for that type of information in the application data stores 822-828 (**Multer** Col 11, Lines 11-14). In one embodiment, the invention comprises a set of programs specifically designed to transmit and/or receive differencing data from one device to another device, irrespective of the type of file system, data, content, or system hardware configuration (**Multer** Col 5, Lines 17-16-20).

The objects in universal data format are device, (application) data class, store, folder, item, and data fields (**Multer** Col 18, Lines 40-41).

Examiner interprets the data stores 822-828 as multiple instances of a storage platform/file system and each instance/data store has folders, items, data fields which are interpreted as change units by the examiner.

**“Sequentially enumerating changes to said data and tracking said changes on a per change unit basis”** as items such as when to sync, how to sync, trigger the delta module 950 to perform a synchronization operation (**Multer** Col 11, Lines 55-57). The invention, roughly described, comprises a difference information receiver, a difference information transmitter and a difference information synchronizer which cooperate in a system or device to update data in the device with data received from other systems, or provide data for other systems to use in updating themselves (**Multer** Col 3, Lines 21-25). EnumItem interface allows the enumeration of either Folder objects or Item objects or both (**Multer** Col 20, Lines 16-18).

**“For each instance of said storage platform, tracking the state of changes for that instances, as well as the state of changes for a plurality of other known**



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**instances in the sync community”** as the system includes: a system data store associated with the processing device including a representation of a previous state of application data in the application data store; a difference engine generating difference information associated with a change to said application data store; and an application interface, interpreting application data for the difference engine. The difference engine may further comprise a delta engine comparing the change to said application data store to said system data store to construct difference information (**Multer Abstract**).

**“For synchronization, identifying new changes by comparing the enumerated changes for a particular instance with the state of changes for that instance”** as the system includes: a system data store associated with the processing device including a representation of a previous state of application data in the application data store; a difference engine generating difference information associated with a change to said application data store; and an application interface, interpreting application data for the difference engine. The difference engine may further comprise a delta engine comparing the change to said application data store to said system data store to construct difference information (**Multer Abstract**).

With respect to claim 13, **Multer teaches a method implemented at least in part by a computing device for synchronizing a replica with a data source, each being a sync partner, wherein both said replica and said data source have change state information that is maintained by each sync partner, and wherein said data**

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**source uses an adapter to interface with a hardware/software interface system of said replica, said method comprising:**

**“Said replica sending to said adapter an updated state information for said replica that, based on a last state information for said data source, reflect new changes that have been made since the last synchronization as reflected in said last state information for said data source”** as the system includes: a system data store associated with the processing device including a representation of a previous state of application data in the application data store; a difference engine generating difference information associated with a change to said application data store; and an application interface, interpreting application data for the difference engine. The difference engine may further comprise a delta engine comparing the change to said application data store to said system data store to construct difference information (Multer Abstract).

**“Said adapter, receiving said updated state information for said replica and said new changes”** as in a further aspect, a method for updating data files in a first system is provided. The method includes the steps of providing a data store associated with the first system and including information representing data in the data files at a previous time state; generating first difference information upon a change to the data files by comparing the change to the data store; receiving second difference information for a subset of said data files from a second system; and applying said difference information to said subset of said data files (Multer Abstract).

**“applying a conflict resolution policy selected from a plurality of conflict resolution policies, implementing as many changes to the data source as possible with respect to the specified conflict resolution policy and tracking success or failure for each change on a change unit by change unit basis”** as conflict resolution module 940 (**Multer** Figure 9A). In this embodiment, storage server 300 may include routines, described below, for resolving conflicts between data which has changed on both System A and System B independently after the last point in times when the systems were synchronized (**Multer** Col 7, Lines 1-5).

**“wherein changes are sequentially enumerated and tracked on a per change unit basis”** as items such as when to sync, how to sync, trigger the delta module 950 to perform a synchronization operation (**Multer** Col 11, Lines 55-57). The invention, roughly described, comprises a difference information receiver, a difference information transmitter and a difference information synchronizer which cooperate in a system or device to update data in the device with data received from other systems, or provide data for other systems to use in updating themselves (**Multer** Col 3, Lines 21-25). EnumItem interface allows the enumeration of either Folder objects or Item objects or both (**Multer** Col 20, Lines 16-18).

With respect to claim 14, **Multer** teaches **“the method of claim 13, further comprising: said adapter calculating the new state of the data source based on the success or failure for each change on a change unit by change unit basis, storing this new state information, and transmitting this new state information to**

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**the hardware/software interface system of the replica said hardware/software interface system of the replica storing said new state information for said data source for future use by said replica”** as the system includes: a system data store associated with the processing device including a representation of a previous state of application data in the application data store; a difference engine generating difference information associated with a change to said application data store; and an application interface, interpreting application data for the difference engine. The difference engine may further comprise a delta engine comparing the change to said application data store to said system data store to construct difference information. In a further aspect, a method for updating data files in a first system is provided. The method includes the steps of providing a data store associated with the first system and including information representing data in the data files at a previous time state; generating first difference information upon a change to the data files by comparing the change to the data store; receiving second difference information for a subset of said data files from a second system; and applying said difference information to said subset of said data files (**Multer Abstract**).

With respect to claim 15, **Multer** teaches **the method of claim 13 further comprising:**

**“said adapter transmitting to the hardware/software interface system of the replica the success or failure for each change on a change unit by change unit basis”** as in this embodiment, storage server 300 may include routines, described

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below, for resolving conflicts between data which has changed on both System A and System B independently after the last point in times when the systems were synchronized (**Multer** Col 7, Lines 1-5). Examiner interprets conflicts as failure or success.

**“said hardware/software interface system of the replica calculating a new state information for the data source based on the success or failure for each change to the data source on a change unit by change unit basis”** as once the engine server lock is acquired, the storage server will be checked to determine whether a new version of the data exists on the storage server at step 1430. If no new version exists, the synchronization process ends. If a new version of the data exists, the device engine will retrieve the difference information at step 1435 “to get .DELTA..” Once a .DELTA. is retrieved, conflicts are resolved at step 1450. The resolve conflicts step allows a user to resolve conflicts to multiple types of data, which have been changed on both the server portion of the device and in the local data (**Multer** Col 37, Lines 3-13).

**“said hardware/software interface system of the replica transmitting the new state information to the adapter and storing said new state information for future use by said replica; and said adapter receiving and storing said new state information”** as (**Multer** Col 12, Lines 39-53). Examiner interprets that versioning module keeps track of the new and old states by assigning a universal unique ID.

Claims 16-17, 20-24, and 28-30 are essentially the same as claims 1-2, 5-9, and 13-15 except they set forth the claimed invention as a computer-readable medium comprising instructions and are rejected for the same reason as applied hereinabove.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-4, 10-12, 18-19, and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Multer et al.** (U.S. Patent No. 6,694,336) in view of **Keith, JR. et al** (**Keith** hereinafter) (U.S. PG Pub No. 2004/0068523).

With respect to claim 3, **Multer** does not explicitly teaches “**the system of claim 1 wherein a first instance of the storage platform is a replica, running on a hardware/software interface system that has the synchronization subsystem and a second instance of the storage platform is a data source, that is, running on a**

**hardware/software interface system that does not have the synchronization subsystem."**

However, **Keith** discloses **"the system of claim 1 wherein a first instance of the storage platform is a replica, running on a hardware/software interface system that has the synchronization subsystem and a second instance of the storage platform is a data source, that is, running on a hardware/software interface system that does not have the synchronization subsystem"** as file synchronization technique is "master-to-slave" file synchronization. This technique replicates the file system of one system ("slave system") with the file system of another file system ("master system") in one direction. For instance, only changes that are made on the master system are replicated on the slave system, and not vice versa (**Keith** Paragraph 0003).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Keith's** teachings would have allowed **Multer** to perform secured file synchronization between multiple servers by using peer to peer server environment and by encrypting servers via virtual private network techniques.

With respect to claim 4, **Multer** teaches **"the system of claim 3 wherein the synchronization between the replica and the data source is facilitated by a synchronization adapter that virtualizes the data source by interfacing with an**

**application programming interface of the hardware/software interface system of the replica” as (Multer Col 16, Lines 60-67).**

With respect to claim 10, **Multer** teaches **“the method of claim 9, wherein a first instance, a replica, is instantiated on a hardware/software interface system that directly supports Item-based synchronization”** as In one embodiment, the invention comprises a set of programs specifically designed to transmit and/or receive differencing data from one device to another device, irrespective of the type of file system, data, content, or system hardware configuration (**Multer Col 5, Lines 17-16-20**).

The objects in universal data format are device, (application) data class, store, folder, item, and data fields (**Multer Col 18, Lines 40-41**).

**“said method further comprising the use of an adapter to virtualize the second instance via a synchronization application programming interface” as (Multer Col 16, Lines 52-67).**

**Multer** teaches the elements of claim 10 as noted above but does not explicitly disclose **“and wherein a second instance, a data source, is instantiated on a hardware/software interface system that does not directly support Item-based synchronization.”**

However, **Keith** discloses **“and wherein a second instance, a data source, is instantiated on a hardware/software interface system that does not directly support Item-based synchronization”** as file synchronization technique is "master-to-slave" file synchronization. This technique replicates the file system of one system



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("slave system") with the file system of another file system ("master system") in one direction. For instance, only changes that are made on the master system are replicated on the slave system, and not vice versa (**Keith** Paragraph 0003).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the cited references because **Keith's** teachings would have allowed **Multer** to perform secured file synchronization between multiple servers by using peer to peer server environment and by encrypting servers via virtual private network techniques.

With respect to claim 11, **Multer** teaches **"the method of claim 10 further comprising detecting synchronization conflicts at the level of change unit granularity"** as in this embodiment, storage server 300 may include routines, described below, for resolving conflicts between data which has changed on both System A and System B independently after the last point in times when the systems were synchronized (**Multer** Col 7, Lines 1-5).

With respect to claim 12, **Multer** teaches **"the method of claim 10, further comprising: instances reporting success, failure, and/or conflicts at individual change unit level on change application, the instance comprising sync data"** as in this embodiment, storage server 300 may include routines, described below, for resolving conflicts between data which has changed on both System A and System B

independently after the last point in times when the systems were synchronized (**Multer** Col 7, Lines 1-5).

**“applications using sync data for updating a backend state”** as items such as when to sync, how to sync, trigger the delta module 950 to perform a synchronization operation (**Multer** Col 11, Lines 55-57). The invention, roughly described, comprises a difference information receiver, a difference information transmitter and a difference information synchronizer which cooperate in a system or device to update data in the device with data received from other systems, or provide data for other systems to use in updating themselves (**Multer** Col 3, Lines 21-25).

Claims 18-19, and 25-27 are essentially the same as claims 3-4, and 10-12 except they set forth the claimed invention as a computer-readable medium comprising instructions and are rejected for the same reason as applied hereinabove.

### ***Response to Arguments***

Applicant's arguments filed on 04/16/2007 have been considered but are moot in view of the new ground(s) of rejection.

See above rejections for the arguments. In these arguments applicant relies on the amended claims and not the original ones.

Claims must be given the broadest reasonable interpretation during examination and limitations appearing in the specification but not recited in the claim are not read into the claim (See M.P.E.P. 2111 [R-I]).

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usmaan Saeed whose telephone number is (571)272-4046. The examiner can normally be reached on M-F 8-5.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571)272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Usmaan Saeed  
Patent Examiner

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Leslie Wong   
Primary Examiner

US  
June 18, 2007

  
**MOHAMMAD ALI**  
**PRIMARY EXAMINER**